

## SEQUENCE LISTING

&lt;110&gt; HANSA MEDICAL RESEARCH AB

&lt;120&gt; METHOD AND TREATMENT

&lt;130&gt; N.87400B SER/SJB

&lt;160&gt; 10

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 484

&lt;212&gt; PRT

&lt;213&gt; Streptococcus pyogenes

&lt;400&gt; 1

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Met Ala Lys Asn Asn Thr Asn Arg His Tyr Ser Leu Arg Lys Leu Lys
1      5      10      15
Thr Gly Thr Ala Ser Val Ala Val Ala Leu Thr Val Leu Gly Ala Gly
20      25      30
Phe Ala Asn Gln Thr Glu Val Lys Ala Asn Gly Asp Gly Asn Pro Arg
35      40      45
Glu Val Ile Glu Asp Leu Ala Asn Asn Pro Ala Ile Gln Asn Ile
50      55      60
Arg Leu Arg Tyr Glu Asn Lys Asp Leu Lys Ala Arg Leu Glu Asn Ala
65      70      75      80
Met Glu Val Ala Gly Arg Asp Phe Lys Arg Ala Glu Glu Leu Glu Lys
85      90      95
Ala Lys Gln Ala Leu Glu Asp Gln Arg Lys Asp Leu Glu Thr Lys Leu
100     105     110
Lys Glu Leu Gln Gln Asp Tyr Asp Leu Ala Lys Glu Ser Thr Ser Trp
115     120     125
Asp Arg Gln Arg Leu Glu Lys Glu Leu Glu Glu Lys Lys Glu Ala Leu
130     135     140
Glu Leu Ala Ile Asp Gln Ala Ser Arg Asp Tyr His Arg Ala Thr Ala
145     150     155     160
Leu Glu Lys Glu Leu Glu Glu Lys Lys Lys Ala Leu Glu Leu Ala Ile
165     170     175
Asp Gln Ala Ser Gln Asp Tyr Asn Arg Ala Asn Val Leu Glu Lys Glu
180     185     190
Leu Glu Thr Ile Thr Arg Glu Gln Glu Ile Asn Arg Asn Leu Leu Gly
195     200     205
Asn Ala Lys Leu Glu Leu Asp Gln Leu Ser Ser Glu Lys Glu Gln Leu
210     215     220
Thr Ile Glu Lys Ala Lys Leu Glu Glu Glu Lys Gln Ile Ser Asp Ala
225     230     235     240
Ser Arg Gln Ser Leu Arg Arg Asp Leu Asp Ala Ser Arg Glu Ala Lys
245     250     255
Lys Gln Val Glu Lys Asp Leu Ala Asn Leu Thr Ala Glu Leu Asp Lys
260     265     270
Val Lys Glu Asp Lys Gln Ile Ser Asp Ala Ser Arg Gln Gly Leu Arg
275     280     285
Arg Asp Leu Asp Ala Ser Arg Glu Ala Lys Lys Gln Val Glu Lys Asp
290     295     300
Leu Ala Asn Leu Thr Ala Glu Leu Asp Lys Val Lys Glu Glu Lys Gln
305     310     315     320
Ile Ser Asp Ala Ser Arg Gln Gly Leu Arg Arg Asp Leu Asp Ala Ser
325     330     335
Arg Glu Ala Lys Lys Gln Val Glu Lys Ala Leu Glu Glu Ala Asn Ser

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<213> Homo sapiens
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 -15 -10 -5  
 Gly Val Arg Gly Pro Arg Val Val Glu Arg His Gln Ser Ala Cys Lys  
 -1 1 5 10  
 Asp Ser Asp Trp Pro Phe Cys Ser Asp Glu Asp Trp Asn Tyr Lys Cys  
 15 20 25  
 Pro Ser Gly Cys Arg Met Lys Gly Leu Ile Asp Glu Val Asn Gln Asp  
 30 35 40 45  
 Phe Thr Asn Arg Ile Asn Lys Leu Lys Asn Ser Leu Phe Glu Tyr Gln  
 50 55 60  
 Lys Asn Asn Lys Asp Ser His Ser Leu Thr Thr Asn Ile Met Glu Ile  
 65 70 75  
 Leu Arg Gly Asp Phe Ser Ser Ala Asn Asn Arg Asp Asn Thr Tyr Asn  
 80 85 90  
 Arg Val Ser Glu Asp Leu Arg Ser Arg Ile Glu Val Leu Lys Arg Lys  
 95 100 105  
 Val Ile Glu Lys Val Gln His Ile Gln Leu Leu Gln Lys Asn Val Arg  
 110 115 120 125  
 Ala Gln Leu Val Asp Met Lys Arg Leu Glu Val Asp Ile Asp Ile Lys  
 130 135 140  
 Ile Arg Ser Cys Arg Gly Ser Cys Ser Arg Ala Leu Ala Arg Glu Val  
 145 150 155  
 Asp Leu Lys Asp Tyr Glu Asp Gln Gln Lys Gln Leu Glu Gln Val Ile  
 160 165 170  
 Ala Lys Asp Leu Leu Pro Ser Arg Asp Arg Gln His Leu Pro Leu Ile  
 175 180 185  
 Lys Met Lys Pro Val Pro Asp Leu Val Pro Gly Asn Phe Lys Ser Gln  
 190 195 200 205  
 Leu Gln Lys Val Pro Pro Glu Trp Lys Ala Leu Thr Asp Met Pro Gln  
 210 215 220  
 Met Arg Met Glu Leu Glu Arg Pro Gly Gly Asn Glu Ile Thr Arg Gly  
 225 230 235  
 Gly Ser Thr Ser Tyr Gly Thr Gly Ser Glu Thr Glu Ser Pro Arg Asn  
 240 245 250  
 Pro Ser Ser Ala Gly Ser Trp Asn Ser Gly Ser Ser Gly Pro Gly Ser  
 255 260 265  
 Thr Gly Asn Arg Asn Pro Gly Ser Ser Gly Thr Gly Gly Thr Ala Thr  
 270 275 280 285

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Trp Lys Pro Gly Ser Ser Gly Pro Gly Ser Thr Gly Ser Trp Asn Ser  
 290 295 300  
 Gly Ser Ser Gly Thr Gly Ser Thr Gly Asn Gln Asn Pro Gly Ser Pro  
 305 310 315  
 Arg Pro Gly Ser Thr Gly Thr Trp Asn Pro Gly Ser Ser Glu Arg Gly  
 320 325 330  
 Ser Ala Gly His Trp Thr Ser Glu Ser Ser Val Ser Gly Ser Thr Gly  
 335 340 345  
 Gln Trp His Ser Glu Ser Gly Ser Phe Arg Pro Asp Ser Pro Gly Ser  
 350 355 360 365  
 Gly Asn Ala Arg Pro Asn Asn Pro Asp Trp Gly Thr Phe Glu Glu Val  
 370 375 380  
 Ser Gly Asn Val Ser Pro Gly Thr Arg Arg Glu Tyr His Thr Glu Lys  
 385 390 395  
 Leu Val Thr Ser Lys Gly Asp Lys Glu Leu Arg Thr Gly Lys Glu Lys  
 400 405 410  
 Val Thr Ser Gly Ser Thr Thr Thr Thr Arg Arg Ser Cys Ser Lys Thr  
 415 420 425  
 Val Thr Lys Thr Val Ile Gly Pro Asp Gly His Lys Glu Val Thr Lys  
 430 435 440 445  
 Glu Val Val Thr Ser Glu Asp Gly Ser Asp Cys Pro Glu Ala Met Asp  
 450 455 460  
 Leu Gly Thr Leu Ser Gly Ile Gly Thr Leu Asp Gly Phe Arg His Arg  
 465 470 475  
 His Pro Asp Glu Ala Ala Phe Phe Asp Thr Ala Ser Thr Gly Lys Thr  
 480 485 490  
 Phe Pro Gly Phe Phe Ser Pro Met Leu Gly Glu Phe Val Ser Glu Thr  
 495 500 505  
 Glu Ser Arg Gly Ser Glu Ser Gly Ile Phe Thr Asn Thr Lys Glu Ser  
 510 515 520 525  
 Ser Ser His His Pro Gly Ile Ala Glu Phe Pro Ser Arg Gly Lys Ser  
 530 535 540  
 Ser Ser Tyr Ser Lys Gln Phe Thr Ser Ser Thr Ser Tyr Asn Arg Gly  
 545 550 555  
 Asp Ser Thr Phe Glu Ser Lys Ser Tyr Lys Met Ala Asp Glu Ala Gly  
 560 565 570  
 Ser Glu Ala Asp His Glu Gly Thr His Ser Thr Lys Arg Gly His Ala  
 575 580 585  
 Lys Ser Arg Pro Val Arg Gly Ile His Thr Ser Pro Leu Gly Lys Pro  
 590 595 600 605  
 Ser Leu Ser Pro

<210> 6  
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 <213> Homo sapiens

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Met	Lys	Arg	Met	Val	Ser	Trp	Ser	Phe	His	Lys	Leu	Lys	Thr	Met	Lys	-40	-35	-30
His	Leu	Leu	Leu	Leu	Leu	Leu	Cys	Val	Phe	Leu	Val	Lys	Ser	Gln	Gly	-25	-20	-15
Val	Asn	Asp	Asn	Glu	Glu	Gly	Phe	Ser	Ala	Arg	Gly	His	Arg	Pro		-10	-5	-1
Leu	Asp	Lys	Lys	Arg	Glu	Glu	Ala	Pro	Ser	Leu	Arg	Pro	Ala	Pro	Pro	5	10	15
Pro	Ile	Ser	Gly	Gly	Gly	Tyr	Arg	Ala	Arg	Pro	Ala	Lys	Ala	Ala	Ala	20	25	30
Thr	Gln	Lys	Lys	Val	Glu	Arg	Lys	Ala	Pro	Asp	Ala	Gly	Gly	Cys	Leu	40	45	50
His	Ala	Asp	Pro	Asp	Leu	Gly	Val	Leu	Cys	Pro	Thr	Gly	Cys	Gln	Leu	55	60	65
Gln	Glu	Ala	Leu	Leu	Gln	Gln	Glu	Arg	Pro	Ile	Arg	Asn	Ser	Val	Asp	70	75	80
Glu	Leu	Asn	Asn	Asn	Val	Glu	Ala	Val	Ser	Gln	Thr	Ser	Ser	Ser	Ser	85	90	95
Phe	Gln	Tyr	Met	Tyr	Leu	Leu	Lys	Asp	Leu	Trp	Gln	Lys	Arg	Gln	Lys	105	110	115
Gln	Val	Lys	Asp	Asn	Glu	Asn	Val	Val	Asn	Glu	Tyr	Ser	Ser	Glu	Leu	120	125	130
Glu	Lys	His	Gln	Leu	Tyr	Ile	Asp	Glu	Thr	Val	Asn	Ser	Asn	Ile	Pro	135	140	145
Thr	Asn	Leu	Arg	Val	Leu	Arg	Ser	Ile	Leu	Glu	Asn	Leu	Arg	Ser	Lys	150	155	160
Ile	Gln	Lys	Leu	Glu	Ser	Asp	Val	Ser	Ala	Gln	Met	Glu	Tyr	Cys	Arg	165	170	175
Thr	Pro	Cys	Thr	Val	Ser	Cys	Asn	Ile	Pro	Val	Val	Ser	Gly	Lys	Glu	185	190	195
Cys	Glu	Glu	Ile	Ile	Arg	Lys	Gly	Gly	Glu	Thr	Ser	Glu	Met	Tyr	Leu	200	205	210
Ile	Gln	Pro	Asp	Ser	Ser	Val	Lys	Pro	Tyr	Arg	Val	Tyr	Cys	Asp	Met	215	220	225
Asn	Thr	Glu	Asn	Gly	Gly	Trp	Thr	Val	Ile	Gln	Asn	Arg	Gln	Asp	Gly	230	235	240
Ser	Val	Asp	Phe	Gly	Arg	Lys	Trp	Asp	Pro	Tyr	Lys	Gln	Gly	Phe	Gly	245	250	255
Asn	Val	Ala	Thr	Asn	Thr	Asp	Gly	Lys	Asn	Tyr	Cys	Gly	Leu	Pro	Gly	265	270	275
Glu	Tyr	Trp	Leu	Gly	Asn	Asp	Lys	Ile	Ser	Gln	Leu	Thr	Arg	Met	Gly	280	285	290
Pro	Thr	Glu	Leu	Leu	Ile	Glu	Met	Glu	Asp	Trp	Lys	Gly	Asp	Lys	Val	295	300	305
Lys	Ala	His	Tyr	Gly	Gly	Phe	Thr	Val	Gln	Asn	Glu	Ala	Asn	Lys	Tyr	310	315	320
Gln	Ile	Ser	Val	Asn	Lys	Tyr	Arg	Gly	Thr	Ala	Gly	Asn	Ala	Leu	Met	325	330	335
Asp	Gly	Ala	Ser	Gln	Leu	Met	Gly	Glu	Asn	Arg	Thr	Met	Thr	Ile	His	345	350	355
Asn	Gly	Met	Phe	Phe	Ser	Thr	Tyr	Asp	Arg	Asp	Asn	Asp	Gly	Trp	Leu	360	365	370
Thr	Ser	Asp	Pro	Arg	Lys	Gln	Cys	Ser	Lys	Glu	Asp	Gly	Gly	Gly	Trp	375	380	385
Trp	Tyr	Asn	Arg	Cys	His	Ala	Ala	Asn	Pro	Asn	Gly	Arg	Tyr	Tyr	Trp	390	395	400
Gly	Gly	Gln	Tyr	Thr	Trp	Asp	Met	Ala	Lys	His	Gly	Thr	Asp	Asp	Gly	405	410	415
Val	Val	Trp	Met	Asn	Trp	Lys	Gly	Ser	Trp	Tyr	Ser	Met	Arg	Lys	Met			420

425  
 Ser Met Lys Ile Arg Pro Phe Phe Pro Gln Gln  
 440 445

435

<210> 7  
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 <213> Homo sapiens

<220>  
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 Leu Leu Phe Leu Ser Ser Thr Cys Val Ala Tyr Val Ala Thr Arg Asp  
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 Asn Cys Cys Ile Leu Asp Glu Arg Phe Gly Ser Tyr Cys Pro Thr Thr  
 10 15 20  
 Cys Gly Ile Ala Asp Phe Leu Ser Thr Tyr Gln Thr Lys Val Asp Lys  
 25 30 35  
 Asp Leu Gln Ser Leu Glu Asp Ile Leu His Gln Val Glu Asn Lys Thr  
 40 45 50  
 Ser Glu Val Lys Gln Leu Ile Lys Ala Ile Gln Leu Thr Tyr Asn Pro  
 55 60 65 70  
 Asp Glu Ser Ser Lys Pro Asn Met Ile Asp Ala Ala Thr Leu Lys Ser  
 75 80 85  
 Arg Ile Met Leu Glu Glu Ile Met Lys Tyr Glu Ala Ser Ile Leu Thr  
 90 95 100  
 His Asp Ser Ser Ile Arg Tyr Leu Gln Glu Ile Tyr Asn Ser Asn Asn  
 105 110 115  
 Gln Lys Ile Val Asn Leu Lys Glu Lys Val Ala Gln Leu Glu Ala Gln  
 120 125 130  
 Cys Gln Glu Pro Cys Lys Asp Thr Val Gln Ile His Asp Ile Thr Gly  
 135 140 145 150  
 Lys Asp Cys Gln Asp Ile Ala Asn Lys Gly Ala Lys Gln Ser Gly Leu  
 155 160 165  
 Tyr Phe Ile Lys Pro Leu Lys Ala Asn Gln Gln Phe Leu Val Tyr Cys  
 170 175 180  
 Glu Ile Asp Gly Ser Gly Asn Gly Trp Thr Val Phe Gln Lys Arg Leu  
 185 190 195  
 Asp Gly Ser Val Asp Phe Lys Lys Asn Trp Ile Gln Tyr Lys Glu Gly  
 200 205 210  
 Phe Gly His Leu Ser Pro Thr Gly Thr Thr Glu Phe Trp Leu Gly Asn  
 215 220 225 230  
 Glu Lys Ile His Leu Ile Ser Thr Gln Ser Ala Ile Pro Tyr Ala Leu  
 235 240 245  
 Arg Val Glu Leu Glu Asp Trp Asn Gly Arg Thr Ser Thr Ala Asp Tyr  
 250 255 260  
 Ala Met Phe Lys Val Gly Pro Glu Ala Asp Lys Tyr Arg Leu Thr Tyr  
 265 270 275  
 Ala Tyr Phe Ala Gly Gly Asp Ala Gly Asp Ala Phe Asp Gly Phe Asp  
 280 285 290  
 Phe Gly Asp Asp Pro Ser Asp Lys Phe Phe Thr Ser His Asn Gly Met

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295          300          305          310
Gln Phe Ser Thr Trp Asp Asn Asp Asn Asp Lys Phe Glu Gly Asn Cys
          315          320          325
Ala Glu Gln Asp Gly Ser Gly Trp Trp Met Asn Lys Cys His Ala Gly
          330          335          340
His Leu Asn Gly Val Tyr Tyr Gln Gly Gly Thr Tyr Ser Lys Ala Ser
          345          350          355
Thr Pro Asn Gly Tyr Asp Asn Gly Ile Ile Trp Ala Thr Trp Lys Thr
          360          365          370
Arg Trp Tyr Ser Met Lys Lys Thr Thr Met Lys Ile Ile Pro Phe Asn
          375          380          385          390
Arg Leu Thr Ile Gly Glu Gly Gln Gln His His Leu Gly Gly Ala Lys
          395          400          405
Gln Val Arg Pro Glu His Pro Ala Glu Thr Glu Tyr Asp Ser Leu Tyr
          410          415          420
Pro Glu Asp Asp Leu
          425

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<210> 8
<211> 1152
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<213> Homo sapiens

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Met Ala Leu Arg Val Leu Leu Leu Thr Ala Leu Thr Leu Cys His Gly
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Phe Asn Leu Asp Thr Glu Asn Ala Met Thr Phe Gln Glu Asn Ala Arg
1          5          10          15
Gly Phe Gly Gln Ser Val Val Gln Leu Gln Gly Ser Arg Val Val Val
          20          25          30
Gly Ala Pro Gln Glu Ile Val Ala Ala Asn Gln Arg Gly Ser Leu Tyr
          35          40          45
Gln Cys Asp Tyr Ser Thr Gly Ser Cys Glu Pro Ile Arg Leu Gln Val
          50          55          60
Pro Val Glu Ala Val Asn Met Ser Leu Gly Leu Ser Leu Ala Ala Thr
65          70          75          80
Thr Ser Pro Pro Gln Leu Leu Ala Cys Gly Pro Thr Val His Gln Thr
          85          90          95
Cys Ser Glu Asn Thr Tyr Val Lys Gly Leu Cys Phe Leu Phe Gly Ser
          100          105          110
Asn Leu Arg Gln Gln Pro Gln Lys Phe Pro Glu Ala Leu Arg Gly Cys

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115	120	125
Pro Gln Glu Asp Ser Asp Ile	Ala Phe Leu Ile Asp	Gly Ser Gly Ser
130	135	140
Ile Ile Pro His Asp Phe Arg Arg	Met Lys Glu Phe Val Ser Thr Val	
145	150	155
Met Glu Gln Leu Lys Lys Ser Lys Thr	Leu Phe Ser Leu Met Gln Tyr	160
165	170	175
Ser Glu Glu Phe Arg Ile His Phe Thr	Phe Lys Glu Phe Gln Asn Asn	190
180	185	195
Pro Asn Pro Arg Ser Leu Val Lys Pro	Ile Thr Gln Leu Leu Gly Arg	205
210	215	220
Thr His Thr Ala Thr Gly Ile Arg Lys	Val Val Arg Glu Leu Phe Asn	
225	230	235
Ile Thr Asn Gly Ala Arg Lys Asn Ala	Phe Lys Ile Leu Val Val Ile	240
245	250	255
Thr Asp Gly Glu Lys Phe Gly Asp Pro	Leu Gly Tyr Glu Asp Val Ile	270
260	265	275
Pro Glu Ala Asp Arg Glu Gly Val Ile	Arg Tyr Val Ile Gly Val Gly	
280	285	290
Asp Ala Phe Arg Ser Glu Lys Ser Arg	Gln Glu Leu Asn Thr Ile Ala	
295	300	305
Ser Lys Pro Pro Arg Asp His Val Phe	Gln Val Asn Asn Phe Glu Ala	
310	315	320
Leu Lys Thr Ile Gln Asn Gln Leu Arg	Glu Lys Ile Phe Ala Ile Glu	
325	330	335
Gly Thr Gln Thr Gly Ser Ser Ser Ser	Phe Glu His Glu Met Ser Gln	
340	345	350
Glu Gly Phe Ser Ala Ala Ile Thr Ser	Asn Gly Pro Leu Leu Ser Thr	
355	360	365
Val Gly Ser Tyr Asp Trp Ala Gly Gly	Val Phe Leu Tyr Thr Ser Lys	
370	375	380
Glu Lys Ser Thr Phe Ile Asn Met Thr	Arg Val Asp Ser Asp Met Asn	
385	390	395
Asp Ala Tyr Leu Gly Tyr Ala Ala Ala	Ile Ile Leu Arg Asn Arg Val	400
405	410	415
Gln Ser Leu Val Leu Gly Ala Pro Arg	Tyr Gln His Ile Gly Leu Val	
420	425	430
Ala Met Phe Arg Gln Asn Thr Gly Met	Trp Glu Ser Asn Ala Asn Val	
435	440	445
Lys Gly Thr Gln Ile Gly Ala Tyr Phe	Gly Ala Ser Leu Cys Ser Val	
450	455	460
Asp Val Asp Ser Asn Gly Ser Thr Asp	Leu Val Leu Ile Gly Ala Pro	
465	470	475
His Tyr Tyr Glu Gln Thr Arg Gly Gly	Gln Val Ser Val Cys Pro Leu	480
485	490	495
Pro Arg Gly Arg Ala Arg Trp Gln Cys	Asp Ala Val Leu Tyr Gly Glu	
500	505	510
Gln Gly Gln Pro Trp Gly Arg Phe Gly	Ala Ala Leu Thr Val Leu Gly	
515	520	525
Asp Val Asn Gly Asp Lys Leu Thr Asp	Val Ala Ile Gly Ala Pro Gly	
530	535	540
Glu Glu Asp Asn Arg Gly Ala Val Tyr	Leu Phe His Gly Thr Ser Gly	
545	550	555
Ser Gly Ile Ser Pro Ser His Ser Gln	Arg Ile Ala Gly Ser Lys Leu	560
565	570	575
Ser Pro Arg Leu Gln Tyr Phe Gly Gln	Ser Leu Ser Gly Gly Gln Asp	
580	585	590
Leu Thr Met Asp Gly Leu Val Asp Leu	Thr Val Gly Ala Gln Gly His	
595	600	605
Val Leu Leu Arg Ser Gln Pro Val Leu	Arg Val Lys Ala Ile Met	



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Glu	Phe	Asn	Pro	Arg	Glu	Val	Ala	Arg	Asn	Val	Phe	Glu	Cys	Asn	Asp
610						615					620				
Gln	Val	Val	Lys	Gly	Lys	Glu	Ala	Gly	Glu	Val	Arg	Val	Cys	Leu	His
625					630					635					640
Val	Gln	Lys	Ser	Thr	Arg	Asp	Arg	Leu	Arg	Glu	Gly	Gln	Ile	Gln	Ser
				645					650					655	
Val	Val	Thr	Tyr	Asp	Leu	Ala	Leu	Asp	Ser	Gly	Arg	Pro	His	Ser	Arg
			660					665				670			
Ala	Val	Phe	Asn	Glu	Thr	Lys	Asn	Ser	Thr	Arg	Arg	Gln	Thr	Gln	Val
		675					680					685			
Leu	Gly	Leu	Thr	Gln	Thr	Cys	Glu	Thr	Leu	Lys	Leu	Gln	Leu	Pro	Asn
690						695					700				
Cys	Ile	Glu	Asp	Pro	Val	Ser	Pro	Ile	Val	Leu	Arg	Leu	Asn	Phe	Ser
705					710					715					720
Leu	Val	Gly	Thr	Pro	Leu	Ser	Ala	Phe	Gly	Asn	Leu	Arg	Pro	Val	Leu
				725					730					735	
Ala	Glu	Asp	Ala	Gln	Arg	Leu	Phe	Thr	Ala	Leu	Phe	Pro	Phe	Glu	Lys
			740					745					750		
Asn	Cys	Gly	Asn	Asp	Asn	Ile	Cys	Gln	Asp	Asp	Leu	Ser	Ile	Thr	Phe
		755					760					765			
Ser	Phe	Met	Ser	Leu	Asp	Cys	Leu	Val	Val	Gly	Gly	Pro	Arg	Glu	Phe
770					775					780					
Asn	Val	Thr	Val	Thr	Val	Arg	Asn	Asp	Gly	Glu	Asp	Ser	Tyr	Arg	Thr
785					790					795					800
Gln	Val	Thr	Phe	Phe	Phe	Pro	Leu	Asp	Leu	Ser	Tyr	Arg	Lys	Val	Ser
				805					810					815	
Thr	Leu	Gln	Asn	Gln	Arg	Ser	Gln	Arg	Ser	Trp	Arg	Leu	Ala	Cys	Glu
			820				825						830		
Ser	Ala	Ser	Ser	Thr	Glu	Val	Ser	Gly	Ala	Leu	Lys	Ser	Thr	Ser	Cys
		835					840					845			
Ser	Ile	Asn	His	Pro	Ile	Phe	Pro	Glu	Asn	Ser	Glu	Val	Thr	Phe	Asn
850						855					860				
Ile	Thr	Phe	Asp	Val	Asp	Ser	Lys	Ala	Ser	Leu	Gly	Asn	Lys	Leu	Leu
865					870					875					880
Leu	Lys	Ala	Asn	Val	Thr	Ser	Glu	Asn	Asn	Met	Pro	Arg	Thr	Asn	Lys
				885					890					895	
Thr	Glu	Phe	Gln	Leu	Glu	Leu	Pro	Val	Lys	Tyr	Ala	Val	Tyr	Met	Val
			900					905					910		
Val	Thr	Ser	His	Gly	Val	Ser	Thr	Lys	Tyr	Leu	Asn	Phe	Thr	Ala	Ser
		915					920					925			
Glu	Asn	Thr	Ser	Arg	Val	Met	Gln	His	Gln	Tyr	Gln	Val	Ser	Asn	Leu
930						935					940				
Gly	Gln	Arg	Ser	Pro	Pro	Ile	Ser	Leu	Val	Phe	Leu	Val	Pro	Val	Arg
945					950					955					960
Leu	Asn	Gln	Thr	Val	Ile	Trp	Asp	Arg	Pro	Gln	Val	Thr	Phe	Ser	Glu
				965				970						975	
Asn	Leu	Ser	Ser	Thr	Cys	His	Thr	Lys	Glu	Arg	Leu	Pro	Ser	His	Ser
		980					985						990		
Asp	Phe	Leu	Ala	Glu	Leu	Arg	Lys	Ala	Pro	Val	Val	Asn	Cys	Ser	Ile
		995					1000					1005			
Ala	Val	Cys	Gln	Arg	Ile	Gln	Cys	Asp	Ile	Pro	Phe	Phe	Gly	Ile	
1010						1015					1020				
Gln	Glu	Glu	Phe	Asn	Ala	Thr	Leu	Lys	Gly	Asn	Leu	Ser	Phe	Asp	
1025						1030					1035				
Trp	Tyr	Ile	Lys	Thr	Ser	His	Asn	His	Leu	Leu	Ile	Val	Ser	Thr	
1040						1045					1050				
Ala	Glu	Ile	Leu	Phe	Asn	Asp	Ser	Val	Phe	Thr	Leu	Leu	Pro	Gly	
1055						1060					1065				
Gln	Gly	Ala	Phe	Val	Arg	Ser	Gln	Thr	Glu	Thr	Lys	Val	Glu	Pro	
1070						1075					1080				
Phe	Glu	Val	Pro	Asn	Pro	Leu	Pro	Leu	Ile	Val	Gly	Ser	Ser	Val	

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1085		1090		1095
Gly Gly Leu Leu Leu Leu	Ala	Leu Ile Thr Ala	Ala	Leu Tyr Lys
1100		1105		1110
Leu Gly Phe Phe Lys Arg	Gln	Tyr Lys Asp Met	Met	Ser Glu Gly
1115		1120		1125
Gly Pro Pro Gly Ala Glu	Pro	Gln		
1130		1135		

<210> 9  
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 <213> Homo sapiens

<220>  
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 <222> (1) .. (19)  
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<220>  
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 <222> (20) .. (1163)  
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<400> 9

Met Thr Arg Thr Arg Ala Ala Leu Leu Leu Phe Thr Ala Leu Ala Thr	-15	-10	-5
Ser Leu Gly Phe Asn Leu Asp Thr Glu Glu Leu Thr Ala Phe Arg Val	-1 1	5	10
Asp Ser Ala Gly Phe Gly Asp Ser Val Val Gln Tyr Ala Asn Ser Trp	15	20	25
Val Val Val Gly Ala Pro Gln Lys Ile Thr Ala Ala Asn Gln Thr Gly	30	35	40
Gly Leu Tyr Gln Cys Gly Tyr Ser Thr Gly Ala Cys Glu Pro Ile Gly	50	55	60
Leu Gln Val Pro Pro Glu Ala Val Asn Met Ser Leu Gly Leu Ser Leu	65	70	75
Ala Ser Thr Thr Ser Pro Ser Gln Leu Leu Ala Cys Gly Pro Thr Val	80	85	90
His His Glu Cys Gly Arg Asn Met Tyr Leu Thr Gly Leu Cys Phe Leu	95	100	105
Leu Gly Pro Thr Gln Leu Thr Gln Arg Leu Pro Val Ser Arg Gln Glu	110	115	120
Cys Pro Arg Gln Glu Gln Asp Ile Val Phe Leu Ile Asp Gly Ser Gly	130	135	140
Ser Ile Ser Ser Arg Asn Phe Ala Thr Met Met Asn Phe Val Arg Ala	145	150	155
Val Ile Ser Gln Phe Gln Arg Pro Ser Thr Gln Phe Ser Leu Met Gln	160	165	170
Phe Ser Asn Lys Phe Gln Thr His Leu Thr Phe Glu Glu Phe Arg Arg	175	180	185
Thr Ser Asn Pro Leu Ser Leu Leu Ala Ser Val His Gln Leu Gln Gly	190	195	200
Phe Thr Tyr Thr Ala Thr Ala Ile Gln Asn Val Val His Arg Leu Phe	210	215	220
His Ala Ser Tyr Gly Ala Arg Arg Asp Ala Thr Lys Ile Leu Ile Val	225	230	235
Ile Thr Asp Gly Lys Lys Glu Gly Asp Thr Leu Asp Tyr Lys Asp Val	240	245	250
Ile Pro Met Ala Asp Ala Ala Gly Ile Ile Arg Tyr Ala Ile Gly Val	255	260	265
Gly Leu Ala Phe Gln Asn Arg Asn Ser Trp Lys Glu Leu Asn Asp Ile			

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270	275	280	285
Ala Ser Lys Pro Ser Gln Glu His Ile Phe Lys Val Glu Asp Phe Asp			
	290	295	300
Ala Leu Lys Asp Ile Gln Thr Gln Leu Arg Glu Lys Ile Phe Pro Ile			
	305	310	315
Glu Gly Thr Glu Thr Thr Ser Ser Ser Ser Phe Glu Leu Glu Met Ala			
	320	325	330
Gln Glu Gly Phe Ser Ala Val Phe Thr Pro Asp Gly Pro Val Leu Gly			
	335	340	345
Ala Val Gly Ser Phe Thr Trp Ser Gly Gly Ala Phe Leu Tyr Pro Pro			
	350	355	360
Asn Met Ser Pro Thr Phe Ile Asn Met Ser Gln Glu Asn Val Asp Met			
	370	375	380
Arg Asp Ser Tyr Leu Gly Tyr Ser Thr Glu Leu Ala Leu Trp Lys Gly			
	385	390	395
Val Gln Ser Leu Val Leu Gly Ala Pro Arg Tyr Gln His Thr Gly Lys			
	400	405	410
Ala Val Ile Phe Thr Gln Val Ser Arg Gln Trp Arg Met Lys Ala Glu			
	415	420	425
Val Thr Gly Thr Gln Ile Gly Ser Tyr Phe Gly Pro Ser Leu Cys Ser			
	430	435	440
Val Asp Val Asp Ser Asp Gly Ser Thr Asp Leu Val Leu Ile Gly Pro			
	450	455	460
Pro His Tyr Tyr Glu Gln Thr Arg Gly Ala Gln Val Ser Val Cys Pro			
	465	470	475
Leu Pro Arg Gly Trp Arg Arg Trp Trp Cys Asp Ala Val Leu Tyr Gly			
	480	485	490
Glu Gln Gly His Pro Trp Gly Arg Phe Gly Ala Ala Leu Thr Val Leu			
	495	500	505
Gly Asp Val Asn Gly Asp Lys Leu Thr Asp Val Val Ile Gly Ala Pro			
	510	515	520
Gly Glu Glu Glu Asn Arg Gly Ala Val Tyr Leu Phe His Gly Val Leu			
	530	535	540
Gly Pro Ser Ile Ser Pro Ser His Ser Gln Arg Ile Ala Gly Ser Gln			
	545	550	555
Leu Ser Ser Arg Leu Gln Tyr Phe Gly Gln Ala Leu Ser Gly Gly Gln			
	560	565	570
Asp Leu Thr Gln Asp Gly Leu Val Asp Leu Ala Val Gly Ala Arg Gly			
	575	580	585
Gln Val Leu Leu Leu Arg Thr Arg Pro Val Leu Trp Val Gly Val Ser			
	590	595	600
Met Gln Phe Ile Pro Ala Glu Ile Pro Arg Ser Ala Phe Glu Cys Arg			
	610	615	620
Glu Gln Val Val Ser Glu Gln Thr Leu Val Gln Ser Asn Ile Cys Leu			
	625	630	635
Tyr Ile Asp Lys Arg Ser Lys Asn Leu Leu Gly Ser Arg Asp Leu Gln			
	640	645	650
Ser Ser Val Thr Leu Asp Leu Ala Leu Asp Pro Gly Arg Leu Ser Pro			
	655	660	665
Arg Ala Thr Phe Gln Glu Thr Lys Asn Arg Ser Leu Ser Arg Val Arg			
	670	675	680
Val Leu Gly Leu Lys Ala His Cys Glu Asn Phe Asn Leu Leu Leu Pro			
	690	695	700
Ser Cys Val Glu Asp Ser Val Thr Pro Ile Thr Leu Arg Leu Asn Phe			
	705	710	715
Thr Leu Val Gly Lys Pro Leu Leu Ala Phe Arg Asn Leu Arg Pro Met			
	720	725	730
Leu Ala Ala Asp Ala Gln Arg Tyr Phe Thr Ala Ser Leu Pro Phe Glu			
	735	740	745
Lys Asn Cys Gly Ala Asp His Ile Cys Gln Asp Asn Leu Gly Ile Ser			
	750	755	760
			765

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Phe Ser Phe Pro Gly Leu Lys Ser Leu Leu Val Gly Ser Asn Leu Glu
770 775 780
Leu Asn Ala Glu Val Met Val Trp Asn Asp Gly Glu Asp Ser Tyr Gly
785 790 795
Thr Thr Ile Thr Phe Ser His Pro Ala Gly Leu Ser Tyr Arg Tyr Val
800 805 810
Ala Glu Gly Gln Lys Gln Gly Gln Leu Arg Ser Leu His Leu Thr Cys
815 820 825
Asp Ser Ala Pro Val Gly Ser Gln Gly Thr Trp Ser Thr Ser Cys Arg
830 835 840 845
Ile Asn His Leu Ile Phe Arg Gly Gly Ala Gln Ile Thr Phe Leu Ala
850 855 860
Thr Phe Asp Val Ser Pro Lys Ala Val Leu Gly Asp Arg Leu Leu Leu
865 870 875
Thr Ala Asn Val Ser Ser Glu Asn Asn Thr Pro Arg Thr Ser Lys Thr
880 885 890
Thr Phe Gln Leu Glu Leu Pro Val Lys Tyr Ala Val Tyr Thr Val Val
895 900 905
Ser Ser His Glu Gln Phe Thr Lys Tyr Leu Asn Phe Ser Glu Ser Glu
910 915 920 925
Glu Lys Glu Ser His Val Ala Met His Arg Tyr Gln Val Asn Asn Leu
930 935 940
Gly Gln Arg Asp Leu Pro Val Ser Ile Asn Phe Trp Val Pro Val Glu
945 950 955
Leu Asn Gln Glu Ala Val Trp Met Asp Val Glu Val Ser Leu Pro Gln
960 965 970
Asn Pro Ser Leu Arg Cys Ser Ser Glu Lys Ile Ala Gly Pro Ala Ser
975 980 985
Asp Phe Leu Ala His Ile Gln Lys Asn Pro Val Leu Asp Cys Ser Ile
990 995 1000 1005
Ala Gly Cys Leu Arg Phe Arg Cys Asp Val Pro Ser Phe Ser Val
1010 1015 1020
Gln Glu Glu Leu Asp Phe Thr Leu Lys Gly Asn Leu Ser Phe Gly
1025 1030 1035
Trp Val Arg Gln Ile Leu Gln Lys Lys Val Ser Val Val Ser Val
1040 1045 1050
Ala Glu Ile Thr Phe Asp Thr Ser Val Tyr Ser Gln Leu Pro Gly
1055 1060 1065
Gln Glu Ala Phe Met Arg Ala Gln Thr Thr Thr Val Leu Glu Lys
1070 1075 1080
Tyr Lys Val His Asn Pro Thr Pro Leu Ile Val Gly Ser Ser Ile
1085 1090 1095
Gly Gly Leu Leu Leu Leu Ala Leu Ile Thr Ala Val Leu Tyr Lys
1100 1105 1110
Val Gly Phe Phe Lys Arg Gln Tyr Lys Glu Met Met Glu Glu Ala
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Pro Ser Glu Lys

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       -5                              -1 1                              5                              10  
 Cys Arg Glu Cys Ile Glu Ser Gly Pro Gly Cys Thr Trp Cys Gln Lys  
                               15                              20                              25  
 Leu Asn Phe Thr Gly Pro Gly Asp Pro Asp Ser Ile Arg Cys Asp Thr  
                               30                              35                              40  
 Arg Pro Gln Leu Leu Met Arg Gly Cys Ala Ala Asp Asp Ile Met Asp  
                               45                              50                              55  
 Pro Thr Ser Leu Ala Glu Thr Gln Glu Asp His Asn Gly Gly Gln Lys  
                               60                              65                              70  
 Gln Leu Ser Pro Gln Lys Val Thr Leu Tyr Leu Arg Pro Gly Gln Ala  
       75                              80                              85                              90  
 Ala Ala Phe Asn Val Thr Phe Arg Arg Ala Lys Gly Tyr Pro Ile Asp  
                               95                              100                              105  
 Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Leu Asp Asp Leu Arg  
                               110                              115                              120  
 Asn Val Lys Lys Leu Gly Gly Asp Leu Leu Arg Ala Leu Asn Glu Ile  
                               125                              130                              135  
 Thr Glu Ser Gly Arg Ile Gly Phe Gly Ser Phe Val Asp Lys Thr Val  
                               140                              145                              150  
 Leu Pro Phe Val Asn Thr His Pro Asp Lys Leu Arg Asn Pro Cys Pro  
       155                              160                              165                              170  
 Asn Lys Glu Lys Glu Cys Gln Pro Pro Phe Ala Phe Arg His Val Leu  
                               175                              180                              185  
 Lys Leu Thr Asn Asn Ser Asn Gln Phe Gln Thr Glu Val Gly Lys Gln  
                               190                              195                              200  
 Leu Ile Ser Gly Asn Leu Asp Ala Pro Glu Gly Gly Leu Asp Ala Met  
                               205                              210                              215  
 Met Gln Val Ala Ala Cys Pro Glu Glu Ile Gly Trp Arg Asn Val Thr  
       220                              225                              230  
 Arg Leu Leu Val Phe Ala Thr Asp Asp Gly Phe His Phe Ala Gly Asp  
       235                              240                              245                              250  
 Gly Lys Leu Gly Ala Ile Leu Thr Pro Asn Asp Gly Arg Cys His Leu  
                               255                              260                              265  
 Glu Asp Asn Leu Tyr Lys Arg Ser Asn Glu Phe Asp Tyr Pro Ser Val  
                               270                              275                              280  
 Gly Gln Leu Ala His Lys Leu Ala Glu Asn Asn Ile Gln Pro Ile Phe  
                               285                              290                              295  
 Ala Val Thr Ser Arg Met Val Lys Thr Tyr Glu Lys Leu Thr Glu Ile  
       300                              305                              310  
 Ile Pro Lys Ser Ala Val Gly Glu Leu Ser Glu Asp Ser Ser Asn Val  
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 Val His Leu Ile Lys Asn Ala Tyr Asn Lys Leu Ser Ser Arg Val Phe  
                               335                              340                              345  
 Leu Asp His Asn Ala Leu Pro Asp Thr Leu Lys Val Thr Tyr Asp Ser  
                               350                              355                              360  
 Phe Cys Ser Asn Gly Val Thr His Arg Asn Gln Pro Arg Gly Asp Cys  
                               365                              370                              375  
 Asp Gly Val Gln Ile Asn Val Pro Ile Thr Phe Gln Val Lys Val Thr  
       380                              385                              390  
 Ala Thr Glu Cys Ile Gln Glu Gln Ser Phe Val Ile Arg Ala Leu Gly  
       395                              400                              405                              410  
 Phe Thr Asp Ile Val Thr Val Gln Val Leu Pro Gln Cys Glu Cys Arg

[illegible]